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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,785	10/23/2003	Tatsuya Sugawara	15682-004001	7171

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FISH & RICHARDSON P.C.  
P.O. BOX 1022  
MINNEAPOLIS, MN 55440-1022

EXAMINER

RUTHKOSKY, MARK

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/691,785

Applicant(s)

SUGAWARA ET AL.

Examiner

Mark Ruthkosky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 7/8/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 7/8/05, 8/9/04, 11/2/04
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

The drawings filed on 10/23/2003 have been approved.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Kashiwagi (US 2002/0136942 and 6,800,390.)

The instant claims are to a fuel cell system comprising a fuel cell which generates electric power based on hydrogen and a oxidant gas supplied from the outside; a hydrogen gas supply flow path for supplying hydrogen to the fuel cell; a hydrogen off-gas circulating passage for

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returning the hydrogen off gas from said fuel cell to said hydrogen gas supply flow path; a hydrogen pump for boosting the hydrogen off gas mounted in said hydrogen off gas passage; a hydrogen off gas bypass passage for returning the hydrogen off gas in the hydrogen off gas passage to said hydrogen gas supply flow path; an ejector for sending the hydrogen off gas to the hydrogen gas supply flow path.

Kashiwagi (US 2002/0136942 and 6,800,390) teach a fuel cell system comprising a fuel cell which generates electric power based on hydrogen and a oxidant gas supplied from the outside; a hydrogen gas supply flow path for supplying hydrogen to the fuel cell; a hydrogen off-gas circulating passage for returning the hydrogen off gas from said fuel cell to said hydrogen gas supply flow path; a hydrogen pump for boosting the hydrogen off gas mounted in said hydrogen off gas passage; a hydrogen off gas bypass passage for returning the hydrogen off gas in the hydrogen off gas passage to said hydrogen gas supply flow path; an ejector for sending the hydrogen off gas to the hydrogen gas supply flow path (see figure 1, claims 1-5 and paragraphs 17-28.) The passage includes a pump that prevents back pass of the flow of hydrogen. Thus, the claims are anticipated.

Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Sugawara (US 2003/0148167.)

Sugawara (US 2003/0148167) teach a fuel cell system comprising a fuel cell which generates electric power based on hydrogen and a oxidant gas supplied from the outside; a hydrogen gas supply flow path for supplying hydrogen to the fuel cell; a hydrogen off-gas circulating passage for returning the hydrogen off gas from said fuel cell to said hydrogen gas

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supply flow path; a hydrogen pump for boosting the hydrogen off gas mounted in said hydrogen off gas passage; a hydrogen off gas bypass passage for returning the hydrogen off gas in the hydrogen off gas passage to said hydrogen gas supply flow path; an ejector for sending the hydrogen off gas to the hydrogen gas supply flow path (see figures 1-12, claims 1-8 and paragraphs 72-95 and 118-122.) The passage includes a pump and check valves that prevent back pass of the flow of hydrogen (see figures 6-10 and the corresponding text.)

With regard to the limitations of claims 4-7, the control of the valve is a process limitation for using the fuel cell system. This limitation has been considered, but is not given patentable weight since the claims are to a product, a fuel cell. MPEP 2113 states, "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." Thus, the claims are anticipated.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwagi (US 2002/0136942 and 6,800,390), as applied above, in view of Sugawara (US 2003/0148167.)

Kashiwagi (US 2002/0136942 and 6,800,390) teach a fuel cell system as previously described. Kashiwagi (US 2002/0136942 and 6,800,390) does not teach a check valve in the hydrogen off gas bypass passage. Sugawara (US 2003/0148167) teach a fuel cell system comprising a fuel cell which generates electric power based on hydrogen and an oxidant gas supplied from the outside; a hydrogen gas supply flow path for supplying hydrogen to the fuel cell; a hydrogen off-gas circulating passage for returning the hydrogen off gas from said fuel cell to said hydrogen gas supply flow path; a hydrogen pump for boosting the hydrogen off gas mounted in said hydrogen off gas passage; a hydrogen off gas bypass passage for returning the hydrogen off gas in the hydrogen off gas passage to said hydrogen gas supply flow path; an ejector for sending the hydrogen off gas to the hydrogen gas supply flow path (see figures 1-12, claims 1-8 and paragraphs 72-95 and 118-122.) The passage includes a pump and check valves that prevent back pass of the flow of hydrogen (see figures 6-10 and the corresponding text.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to include check valves as taught in Sugawara in the fuel cell of Kashiwagi in order to prevent the back flow of the exhaust through the flow path. The check valve allows flow from the hydrogen pump to the ejector, but does not permit flow from the ejector to the hydrogen pump (paragraph 96.) With regard to the limitations of claims 4-7, the control of the valve is a process limitation for using the fuel cell system. This limitation has been considered, but is not given patentable weight since the claims are to a product, a fuel cell. MPEP 2113 states, "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a

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product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” The artisan would have found the claimed invention to be obvious in light of the teachings of the references.

*Examiner Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free.)

Mark Ruthkosky

Primary Patent Examiner

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*Mark Ruthkosky*  
9/3/2006